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| 09/780,375 | 02/12/2001 | Christoph Hauger | 00014 | 7035 |
| 47988 | 7590 | 01/03/2008 | | |
| WALTER OTTESEN PO BOX 4026 GAITHERSBURG, MD 20885-4026 | | | EXAMINER FINEMAN, LEE A | |
| | | | ART UNIT 2872 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 09/780,375 | Applicant(s) HAUGER ET AL. | |
| | Examiner Lee Fineman | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/31/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 18, 20-23, 25 and 27-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 18, 20-23, 25 and 27-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/12/01 & 10/6/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 October 2007 has been entered in which claims 16, 18, 20-21, 23, 25, 27-29, 31 and 33 were amended, claims 34-40 were added and claims 17 and 24 were cancelled. Claims 16, 18, 20-23, 25 and 27-40 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld, US 5,889,611 in view of Pensel et al., US 5,867,308 (henceforth Pensel).

Regarding claim 37, Zonneveld discloses a surgical microscope (fig. 1) with a viewing unit (3) for viewing an object (20) and defining a viewing beam path (fig. 1); an image projection module (33) for supplying data in the form of a data image (column 6, lines 6-16), including an image display unit (34 and 35) for displaying the image data; an image recording module (40) for recording said data image and an object image of said object supplied by said viewing unit

(column 6, lines 48-51); said image recording module including an image sensor (40); a beam splitter (37 and 38 and column 6, lines 32-65) mounted in said viewing beam path for receiving and passing said data image to said image sensor (40) and for directing said object image onto said image sensor (column 6, lines 32-65); said image sensor generating an image signal from both of said data image and said object image for display on a monitor (41); and a device (36) for synchronizing the illumination of said image display unit with said image sensor to avoid flickering (see column 2, lines 35-36 and column 7, lines 3-11 in at least so far as LCDs do not flicker, so flickering would be avoided and it is synchronized to provide the appropriate superimposed images for clear viewing by the user). Zonneveld discloses the claimed invention except for a recording device connected to said image sensor for receiving said image signal and recording said data image and said object image. Pensel teaches a surgical microscope (figs. 1-3) with a recording device (19) connected to said image sensor for receiving said image signal and recording said image data and said image of said object (fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a recording device as taught by Pensel to the system of Zonneveld to have a permanent record of the object being investigated.

Regarding claim 40, Zonneveld further discloses wherein said image sensor (40) is a single image sensor (fig. 1).

4. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld in view of Pensel as applied to claim 37 above and further in view of Ernstoff et al., US 4,090,219 (henceforth Ernstoff).

Zonneveld in view of Pensel as applied to claim 23 above disclose the claimed invention except for the image display unit including a reflection display and wherein the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color or a reflection display illuminated sequentially with different colors as a function of time. Ernstoff teaches in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with different colors as a function of time (column 8, lines 48-56) or illuminated sequentially with a single color as a function of time (in so far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB illumination). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff as the display means in the system of Zonneveld in view of Pensel to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

5. Claims 23, 25, 27, 30-33 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld in view of Pensel as applied to claim 37 above and further in view of Arai, US 4,666,261.

Regarding claims 23, 31 and 33, Zonneveld in view of Pensel as applied to claim 37 above disclose the claimed invention except for the specifics of the imaging optics for projecting the image, i.e., said image projection module including a first and second plano-convex lens, a plano-concave lens, and a concave-convex lens, mounted downstream of said image display unit and being arranged between said image display unit and said beam splitter. Arai teaches a

projection lens assembly (embodiment 1) with a first (lens 1) and second (lens 3) plano-convex lens, a plano-concave lens (lens 4), and a concave-convex lens (lens 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the projection lens assembly of Arai in the system of Zonneveld in view of Pensel to prevent focal variations due to environmental factors (Arai, column 7, lines 34-39).

Regarding claims 25 and 27, Zonneveld in view of Pensel and Arai as set forth above disclose the claimed invention except for the ratio of said first focal length and said second focal length being within a range from 1.9 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have focal lengths within the claimed ratio, since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the focal lengths for the purpose of adjusting the size/magnification of the projected image. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 30, Zonneveld further discloses wherein said image sensor (40) is a single image sensor (fig. 1).

Regarding claim 32, Zonneveld in view of Pensel and Arai as set forth above disclose the claimed invention except for a second beam splitter interposed between the first beam splitter and said image sensor so as to permit an additional viewer to view said data image and said object image. Official Notice is taken that beam splitters are well known in the art for redirecting portions of light into different beam paths. It would have been obvious to one of ordinary skill in the art at the time the invention was made to insert a beam splitter into the beam path to provide an image of the object/data to a location outside of said beam path in order for another viewer to

see the combined image that will be received by the image sensor. It is noted as directed by the MPEP 2144.03 that if the applicant does not seasonably traverse the well known statement during examination, then the object of the well known statement is taken to be admitted prior art. *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). As such, the official notice statements of the examiner are now held to be admitted prior art.

Regarding claims 35 and 36, Zonneveld in view of Pensel and Arai as set forth above disclose the claimed invention except for explicitly stating that the image sensor is a CCD chip. However Pensel further teaches that CCD chips are well known image sensors (see column 7, line 14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the image sensor be a CCD chip as further suggested by Pensel because it is a reliable, easy to obtain sensor commonly used in a microscope system.

6. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld in view of Pensel and Arai as applied to claim 23 above and further in view of Ernstoff.

Zonneveld in view of Pensel and Arai as applied to claim 23 above disclose the claimed invention except for the image display unit including a reflection display and wherein the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color or a reflection display illuminated sequentially with different colors as a function of time. Ernstoff teaches in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with different colors as a function of time (column 8, lines 48-56) or illuminated sequentially with a single color as a function of time (in so

far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB illumination). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff as the display means in the system of Zonneveld in view of Pensel and Arai to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

7. Claims 16, 18, 20, 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld in view of Pensel and Arai as applied to claim 23 above and further in view of Spink et al., US 5,953,114 (henceforth Spink).

Regarding claims 16 and 22, Zonneveld in view of Pensel as applied to claim 23 above disclose the claimed invention except for explicitly stating that said recording device includes an image mixer for receiving both said image data and said image of said object as electronic image data and for mixing said electronic image data therein; and wherein said image projection module has an input for receiving said image data as electronic image data and said image mixer is connected directly to said input for receiving said image data as said electronic image data applied to said input. Spink teaches a surgical microscope (see figs. 2 and 12) including an image projection unit (10b) and an image recording module (at least 90 and 9). Spink further teaches that one can electronically combine the data with an image mixer (89, fig. 12) via inputs for providing an electronic mixed image (see column 13, lines 20-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the images

electronically with an image mixer as taught by Spink to be able to provide better control of the images, e.g. size, (Spink, column 13, line 26-32).

Regarding claims 18 and 20, Zonneveld in view of Pensel, Arai and Spink as set forth above disclose the claimed invention except for the ratio of said first focal length and said second focal length being within a range from 1.9 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have focal lengths within the claimed ratio, since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the focal lengths for the purpose of adjusting the size/magnification of the projected image. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 34, Zonneveld in view of Pensel, Arai and Spink as set forth above disclose the claimed invention except for explicitly stating that the image sensor is a CCD chip. However Pensel further teaches that CCD chips are well known image sensors (see column 7, line 14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the image sensor be a CCD chip as further suggested by Pensel because it is a reliable, easy to obtain sensor commonly used in a microscope system.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zonneveld in view of Pensel, Arai and Spink as applied to claim 16 above and further in view of Ernstoff.

Zonneveld in view of Pensel, Arai and Spink as applied to claim 16 above disclose the claimed invention except for the image display unit including a reflection display and wherein

the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color. Ernstoff et al. teach in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with a single color as a function of time (in so far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB illumination). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff as the display means in the system of Zonneveld in view of Pensel, Arai and Spink to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

Response to Arguments

9. Applicant's arguments with respect to claims 16, 18, 20-23, 25 and 27-36 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's arguments filed 31 October 2007 have been fully considered but they are not persuasive.

Applicant argues that Zonneveld does not disclose, teach or suggest "a device for synchronizing the illumination of said image display unit with said image sensor to avoid flickering. The examiner respectfully disagrees and as stated in the rejection points to Zonneveld column 2, lines 35-36 and column 7, lines 3-11 in at least so far as LCDs do not flicker, so flickering would be avoided and it is synchronized by the device (control unit 36) to provide the appropriate superimposed images for clear viewing by the user.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on (571) 272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Lee Fineman', with a long horizontal flourish extending to the right.

Lee Fineman
Patent Examiner
AU 2872
2 January 2008